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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Arild Vik

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04/27/2010

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EXAMINER

BEST, ZACHARY P

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,971	Applicant(s) VIK ET AL.	
	Examiner Zachary Best	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 32-40 is/are pending in the application.
- 4a) Of the above claim(s) 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 32-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

**POWER GENERATION APPARATUS COMPRISING FUEL CELL AND
REFORMING MODULE**

Examiner: Z. Best S.N. 10/527,971 Art Unit: 1795

DETAILED ACTION

1. Applicant's amendment filed February 22, 2010 was received. Claim 32 was amended. Claims 1 and 32-39 are currently pending examination.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 101

3. The claim rejections under 35 U.S.C. 101 are withdrawn because Claim 32 was amended.

Claim Rejections - 35 USC § 112

4. The claim rejections under 35 U.S.C. 112, first paragraph are withdrawn because Claim 32 was amended.

Claim Rejections - 35 USC § 103

5. Claims 1 and 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demissie et al. (US 6,777,119 B2) in view of Yokota (US 2002/0085967 A1).

Regarding Claims 1 and 35-36, Demissie et al. teach a power generation apparatus (abstract) comprising a fuel cell (12) including an anode (16), a reforming module (18), which reforms a hydrocarbon fuel into hydrogen and other components, the apparatus being arranged so that said hydrogen is fed from the reforming module to the anode of the fuel cell (col. 3, lines 13-17), a recycling arrangement to recycle hydrogen in the outflow stream of the anode of the fuel cell back to the anode (28), and a controlling arrangement (50) to control the amount of hydrogen recycled and to tap off externally (34) hydrogen that is not recycled (col. 5, line 66 – col. 6, line 18, see also fig. 1). However, Demissie et al. fail to teach the said reforming module configured to separate said hydrogen from said other components.

Yokota teaches a process and apparatus for generating hydrogen and carbon dioxide, which may be used for a fuel cell (pars. 2, 7, and 59), wherein carbon dioxide is absorbed in to a form of metal carbonates (par. 63) in order to remove carbon dioxide from the hydrogen stream (par. 39). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to create the electrical current generating system of Demissie et al. having the apparatus of Yokota wherein carbon dioxide is absorbed in to a form of metal carbonates because Yokota teaches it can remove carbon dioxide from the hydrogen stream.

Regarding Claim 32, Demissie et al. teach hydrogen is fed to the anode (col. 1, lines 18-21).

Regarding Claim 33, Demissie et al. teach a removal arrangement to remove water from the outflow stream of the anode (col. 3, lines 50-60).

Regarding Claims 34 and 37, Yokota teaches a desorption module adapted to allow the release of carbon dioxide (par. 44).

Regarding Claim 38, Demissie et al. teach the reforming module is thermally integrated with the fuel cell (col. 3, lines 45-49, and fig. 1).

Regarding Claim 39, Yokota teaches the desorption module is thermally integrated with the fuel cell (par. 72).

Response to Arguments

6. Applicant's arguments filed February 22, 2010 have been fully considered but they are not persuasive.

Applicant argues:

(a) the controlling arrangement claim limitation is not unpatentable over the controller of Demissie et al. and the flow passage of Yokota.

In response to Applicant's arguments:

(a) At the outset, Applicant undervalues the controller of Demissie et al. as being a system element that merely monitors conditions. The controller (50) is also capable of operating specific system elements in the fuel cell system such as a chiller (48) to control temperature and a compressor (52) to control pressure (col. 5, lines 33-39 and col. 6, lines

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45-57). Demissie et al. further teach that the anode exhaust may be recycled or exhausted as desired to maintain good hydrogen utilization (col. 6, lines 2-18), and in order to exhaust the anode exhaust to the ambient the material must pass through pressure control valve (53), which is adjusted based on desired pressure in the fuel cell system (col. 6, lines 23-44). Therefore, one having ordinary skill in the art would have reason to control the anode exhaust of Demissie et al. to maintain good hydrogen utilization through the recycled stream, and to control the pressure control valve, which will also adjust the amount of hydrogen recycled or tapped off from the recycle stream, in order to maintain proper pressure levels with the fuel cell system. Furthermore, it is obvious to automate manual tasks with such means as a controller capable of operating specific elements of the fuel cell system. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action.

In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary Best whose telephone number is (571) 270-3963. The examiner can normally be reached on Monday to Thursday, 7:30 - 5:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zachary Best/
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795